

First Cipher.

1789 letters.

S - 224

V - 175

Z - 168

M - 150

Y - 127

U - 116

F - 110

A - 92

D - 85

J - 70

X - 56

I - 54

Q - 49

E - 48

C - 47

G - 43

W - 41

N - 39

H - 33

P - 24

O - 16

L - 15

B - 14

K - 1

R - 1

T - 1

S might be e.

V might be t.

after substituting.

using frequency analysis and word guessing

t h e.

V D S

D might be h.

t o

V U

U is "o"

P	e ⁴	h ⁷	o ¹⁴	t ¹⁹
C	s	D	U	V ²¹
	18	3	20	

$$C_1 = \alpha X + \beta$$

$$18 = (4\alpha + \beta) \pmod{26}$$

$$C_2 = \alpha X_2 + \beta$$

$$(1) \quad 20 = 14\alpha + \beta$$

$$2 = 10\alpha$$

$$\alpha = 5^{-1} \pmod{26} = 21$$

$$18 = 4(21) + \beta$$

$$18 = 84 + \beta$$

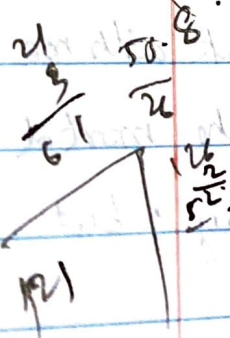
$$-66 = \beta \pmod{26} \quad \beta = 19 \pmod{26}$$

$$3 = 21(x) + 19$$

$$3 - 19 = 21x \quad -16 = 21x$$

$$-55 = x \quad X = 3 = D$$

$\alpha \beta$
(21, 19) Key.



$$C = \alpha x + \beta$$

By changing ~~x~~ = C as A-Z; $\alpha \rightarrow 21$
 $\beta \rightarrow 12$.

we got.

A - s
 B - x
 C - c
 D - h
 E - m
 F - r
 G - w
 H - b
 I - g
 J - l
 K - q
 L - v
 M - a
 N - f
 O - k
 P - p
 Q - u
 R - z
 S - e
 T - j
 U - o
 V - t
 W - y
 X - d
 Y - i
 Z - n

α, β
 $(21, 12)$

Plain	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
	12	07	02	23	18	13	08	03	24	19	14	09	04	25	20	10	05	00	21	16	11	06	01	22	17	
Cipher	M	H	C	X	S	N	I	D	Y	T	O	J	E	Z	U	K	F	A	Q	L	G	B	W	R		